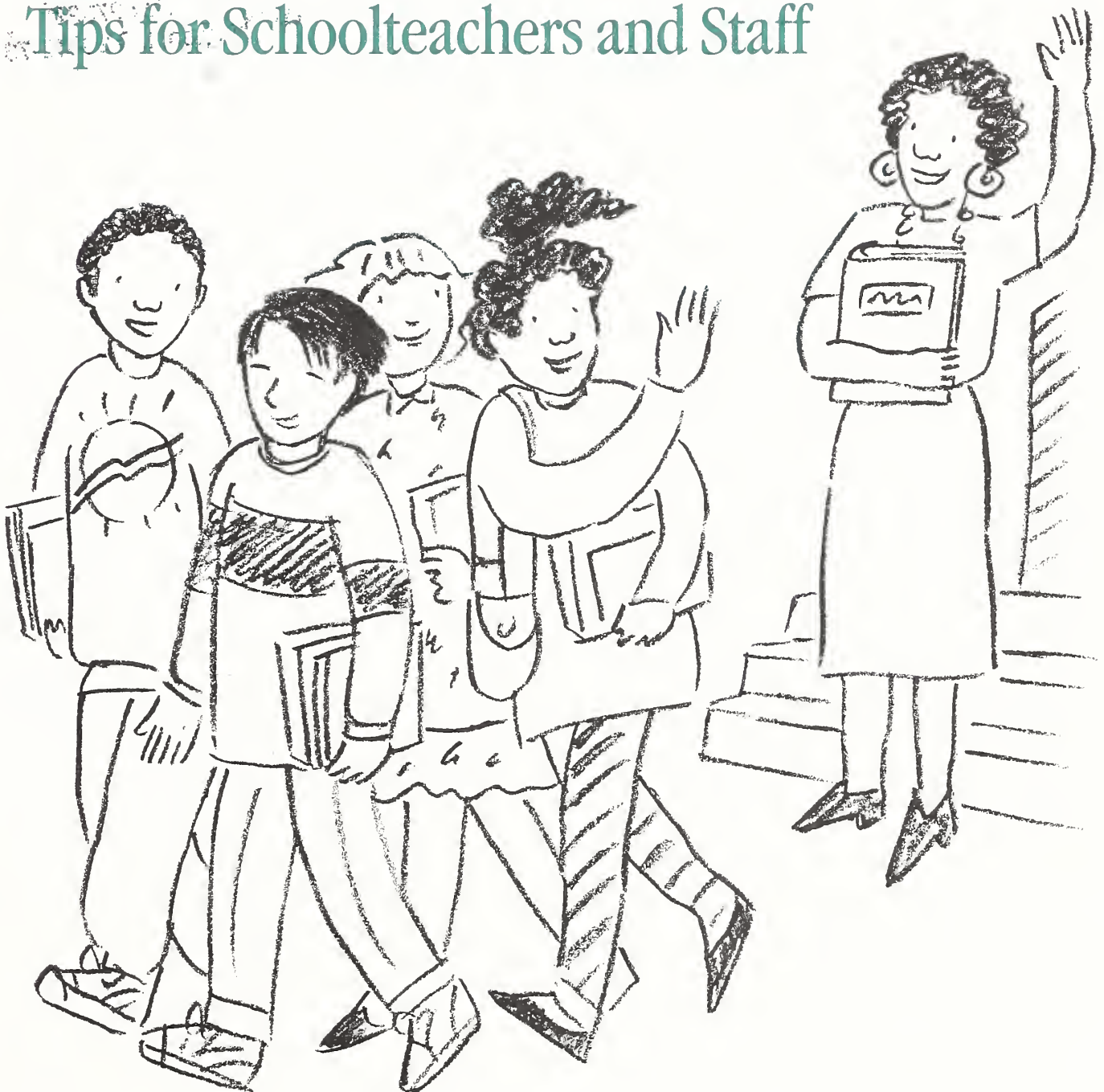




AMERICAN ACADEMY OF ALLERGY
ASTHMA & IMMUNOLOGY

Managing Allergies and Asthma at School

Tips for Schoolteachers and Staff



Supported by an educational grant from Forest Laboratories, Inc.

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Tips for Schoolteachers and Staff

National Institute of Allergy and Infectious Diseases

In Collaboration With

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National Asthma Education and Prevention Program

The American Academy of Allergy,
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INTRODUCTION

Allergy is a common condition that occurs in about 20 percent of children in the United States. Asthma is one of the most common chronic illnesses of childhood, affecting more than 3 million children in the United States alone. Allergies and asthma are leading causes of school absenteeism, accounting for more than 125 million school days lost annually. The impact of both allergies and asthma can be seen not only in school absenteeism but also in the lack of participation in athletic and exercise programs and the amount of time spent taking medication during school hours. In some cases, allergies or asthma can precipitate a life-threatening crisis for a child.

These negative impacts do not need to happen. When allergies and asthma are controlled, students can maintain good performance in school and participate fully in physical activities, including sports.

It takes the family, school personnel, and the physician working together as a team to develop a workable plan of action to keep asthma and allergies well controlled. It is hoped that the information and ideas in this booklet will help school personnel build awareness of the impact of asthma and allergies; develop policies for asthma and allergy issues; and develop a cooperative plan of care for students that establishes communications between home, school, and physician. More specifically, this booklet describes how to:

- recognize the children who have allergies or asthma;
- recognize the potential side effects of treatment for allergy or asthma;
- help children with allergies or asthma manage their condition at school; and
- avoid making children with allergies or asthma feel different from the other students.

NOTE: Inclusion or exclusion of brand names in this booklet does not imply endorsement by the National Institutes of Health.

RECOGNIZING ALLERGIES

Many children suffer unnecessarily from allergic diseases, which often go undiagnosed and untreated. The following clues may help school personnel recognize allergies in children at school.

- Children who rub their eyes or have itchy, red eyes may have allergic conjunctivitis (eye allergy).
- Children who wipe their nose constantly may have hay fever (allergic rhinitis), which causes frequent sneezing, congestion, or runny nose.
- Children who scratch their legs until they bleed may suffer from allergic eczema, a common skin condition. The children may scratch the inside of their elbows and the backs of their knees and calves to relieve the itch, which results in a red crusty rash.
- Children who cough or wheeze for a half hour every day after recess or physical education class may have symptoms of asthma. Asthma episodes of coughing, wheezing, and shortness of breath can be brought on by allergies, irritants, exercise, or cold, dry air.
- Children who develop gastrointestinal problems, hives, or eczema may have food allergies. Other symptoms of food allergy include body swelling, sneezing, a runny nose, and difficulty breathing. The most severe food allergy reaction is anaphylaxis, a life-threatening shock that can occur minutes after people eat a food to which they are allergic.

It is important to remember that allergies and asthma are not contagious and cannot be spread from one child to another.

ALLERGIC RHINITIS

A runny nose isn't always a sign of a cold. Many school children have allergic rhinitis, which can cause runny nose, sneezing, nasal congestion, watery eyes, headaches, and fatigue. These children also may have more frequent ear or sinus problems than other children. Allergic rhinitis has also been called hay fever (symptoms occur more commonly in the fall) and rose fever (symptoms occur more commonly in the spring). These are misnomers because usually there is no fever, and hay and roses are rarely the cause of the symptoms. This seasonal pattern is related to the pollination of plants (ragweed and other weeds in the fall and trees and grasses in the spring). Dust (e.g., in carpets), molds (e.g., in the gym), and animal dander (e.g., from pet rabbits in the classroom) can cause similar problems.

In the United States, more than 20 million people have allergic rhinitis, and the problem can cause trouble for many school-age children. The student with allergic rhinitis may face problems such as:

- the distraction of frequent sneezing and nose wiping;
- trouble hearing due to blockage of the ear tubes (eustachian tubes);
- headaches because of filled or blocked sinus cavities;
- trouble seeing due to blurry eyesight from watery eyes; and
- difficulty concentrating because of an itchy nose.

Many children with allergic rhinitis also have asthma.

Allergic rhinitis can interfere with a child's ability to learn and can cause absenteeism from school. Many children with this condition do not sleep well because of their symptoms. This lack of sleep as well as the side effects of medications used to treat allergic rhinitis may cause concentration and behavior problems. However, proper understanding and treatment of the disease will lead to a more positive school experience as well as improved overall quality of life for the child.

Management

Children who have mild hay fever usually can control their symptoms by taking over-the-counter antihistamines and decongestants as recommended by their doctor. If these medications do not adequately control the symptoms, the child's physician should conduct a careful evaluation that might include allergy testing. The evaluation will point to the specific causes of the problem, and appropriate measures to avoid exposure to these causes can then be recommended. When avoidance is not possible, prescription medications that will not interfere with school performance can be used to reduce symptoms. Other treatments such as immunotherapy injections (allergy shots) also may be used to control the symptoms.

ATOPIC ECZEMA

Atopic eczema, also called atopic dermatitis, is a chronic disorder that causes extremely itchy, inflamed skin. The rash is dry, red, and scaly, typically affecting the insides of the elbows, backs of the knees, and the face. However, the rash can cover the entire body. During flareups, open weeping sores may develop due to vigorous scratching or infection. Atopic eczema often affects people who suffer from allergic rhinitis and/or asthma. Atopic eczema is not contagious; it is inherited from one's parents. Recent surveys indicate that up to 10 percent of children develop atopic eczema. Fortunately, the condition subsides in up to 50 percent of these children as they get older, but they may be subject to periodic return of skin symptoms as well as symptoms of asthma and allergic rhinitis.

Substances or conditions known to trigger flareups of atopic eczema include:

- irritating substances (e.g., soaps, chemicals);
- allergens (e.g., foods, dust mites, animal dander, pollens);
- skin infections;
- dry skin;
- heat and high humidity;
- sweating; and
- emotional stress.

It is well established that stressful emotions such as anger, frustration, and embarrassment may cause flushing and itching, which can cascade into a flareup of eczema. Unfortunately, several features of atopic eczema make children with this condition more likely to experience stress. Peers who do not understand the disorder may ridicule the child's appearance. Lack of sleep and discomfort due to itchiness often lead to poor concentration, irritability, and uncooperative or disruptive behavior in school. A child with eczema may be reluctant to participate in sports or gym class because sweating often induces itching. Food allergies, which cause flareups of eczema in about one-third of children, frequently present problems or embarrassing moments at school parties or day trips.

Management

The key to controlling atopic eczema is to avoid or reduce exposure to the factors that cause flare-ups. To prevent dry skin, children with atopic eczema are encouraged to apply moisturizers that retain water in the skin.

Steroid creams applied several times a day may reduce inflammation and itching. Antihistamines can relieve itching, and antibiotics sometimes are prescribed to control skin infection. (See the section on allergy medicines for more information on antihistamines.)

School nurses or teachers should communicate with parents (and physicians) to learn as much as possible about each child's condition and factors that tend to cause flareups for the child. The child should be allowed to use medications and be excused to apply skin medications or ointments as needed (e.g., after swimming in the school's pool). When flareups of eczema are hard to control, the child should be allowed to participate in physical activities that are not strenuous and should not be made to feel different because of limits on his or her participation. In general, being knowledgeable about atopic eczema and empathetic to the child's physical and emotional state will contribute tremendously to the care of the student with this condition. School nurses or teachers can help educate the child's schoolmates about atopic eczema.

ANAPHYLAXIS

Anaphylaxis is a severe, life-threatening reaction characterized by a variety of symptoms: generalized hives; severe swelling of the eyes, skin, tongue, or throat; wheezing; nausea; vomiting; diarrhea; low blood pressure; fainting; and heart rhythm disturbances. These reactions occur within minutes of exposure to an offending allergen. Substances that commonly cause anaphylaxis in an allergic individual include:

- foods such as peanuts, tree nuts, shellfish, milk, eggs, and fish;
- drugs such as penicillin, sulfa, and aspirin; and
- venom from the stings or bites of insects such as honeybees, yellow jackets, hornets, wasps, or fire ants.

Management

Children with food allergies that cause anaphylaxis must avoid even tiny amounts of the food(s) to which they are allergic. These children should not share food or snacks. School nurses, teachers, and food service personnel should be informed of the allergy and the potential for a severe reaction. The ingredients of food served in the school should be known to the students.

Children with insect allergy should not wear bright clothing or fragrances or be allowed to go barefoot. Outdoor trash cans, which may attract insects, should be covered. Playgrounds with known stinging insect infestation should be closed until the insects can be eradicated. Insects should be avoided, especially in early fall, when they become more aggressive and are more likely to sting.

Children with anaphylactic reactions should be identified in the medical portion of their education file. Children who have had anaphylaxis should wear medical alert bracelets identifying their allergen. Each of these children should have a medical plan outlined by his or her physician.

If a student develops symptoms of anaphylaxis, the school nurse should follow the emergency procedures summarized in the box at the end of this section. It is critical to administer epinephrine and activate the emergency medical system (call 911) immediately. The child should lie down to keep blood flowing to the brain until an ambulance arrives.

All schools should be equipped with epinephrine and have personnel able to administer it in an emergency if a nurse is not present; laws regarding this are different in each State. Children who have had anaphylaxis in the past should have epinephrine at school prescribed by their physician, along with a written plan of action in case of a reaction. These children should be allowed to carry their medication with them and administer it themselves, if possible.

If a child develops symptoms of anaphylaxis after an insect sting, and the stinger is still in the child's skin, it should be gently scraped off the skin (do not squeeze).

Anaphylaxis Emergency Procedures for School Nurses or Other Qualified Personnel

Give an injection of epinephrine (adrenaline) and have someone call 911 as quickly as possible. The epinephrine injection should be given in the soft tissue on the side of the arm or the leg. Premeasured injections of epinephrine are available (Epi-pen for children over 60 pounds; Epi-pen Jr. for children 30 to 60 pounds). Transport the child to the nearest hospital emergency department as expeditiously as possible.

A repeat injection of epinephrine may be given in 15 to 20 minutes if the symptoms do not improve before medical assistance arrives. CPR may be necessary if cardiac arrest occurs.

Contact the parents or legal guardian **ONLY AFTER INSTITUTING LIFESAVING MEASURES WITH EPINEPHRINE, CALLING 911, AND TRANSPORTING THE CHILD TO THE EMERGENCY DEPARTMENT.** Precious moments may be wasted trying to call the child's parents or physician first. Deaths have occurred during these delays.

FOOD ALLERGY

Food hypersensitivity or food allergy is an adverse reaction to food involving the immune system. In a susceptible person, allergens in certain foods trigger an allergic response that can cause discomfort, illness, and in severe cases, death. Foods that most commonly cause allergic reactions include peanuts, tree nuts, milk, eggs, shellfish, and fish. The gastrointestinal tract often is the part of the body affected first by the allergic response. Common symptoms include vomiting, stomach pain, and diarrhea. As other parts of the body are affected, a person may develop symptoms such as hives, swelling, sneezing, a runny nose, and asthma or difficulty breathing. Some people develop eczema due to food allergy. The most serious reaction is anaphylaxis, a life-threatening response that can occur minutes after a person eats a food to which he or she is allergic. This reaction must be recognized and treated promptly (see the section on anaphylaxis).

Not all adverse reactions to food are as severe as food hypersensitivity. Food intolerance is an abnormal reaction to a food or a food additive that does not involve the immune system. This type of reaction includes milk sugar (lactose) intolerance, which occurs when a person does not have enough enzymes to break down lactose for proper digestion. Food intolerance also can result from certain food additives, including color dyes, monosodium glutamate (MSG), and preservatives such as sulfites. Another type of adverse reaction is food intoxication or food poisoning, which occurs when food is contaminated with microorganisms such as bacteria and the toxins they release. There are no scientific studies establishing any association between certain types of behavior, especially hyperactivity, and adverse reactions to food.

Management

The best way to manage food allergy is to avoid the foods that cause allergic reactions. The parents of children with food allergies need to work with their doctor to try to identify these foods. This process may require a detailed medical history, a diary that records foods eaten, a diet to eliminate foods suspected of causing allergy, and skin tests to determine whether diluted extracts of specific foods cause an allergic reaction.

Because of the danger of inadvertent exposure, children with food allergy should never share another student's lunch or snack. Several medications are available to relieve food allergy symptoms that do not involve an anaphylactic reaction. These relief medications include antihistamines to reduce gastrointestinal symptoms, hives, sneezing, or a runny nose and bronchodilators to relieve asthma symptoms. Relief medications are taken after people have inadvertently eaten a food to which they are allergic. Such drugs cannot prevent an allergic reaction when taken prior to eating a food. Allergy shots, a series of purportedly "desensitizing" injections containing extracts of foods to which the patient is allergic, have so far been proven ineffective in relieving food allergies.

HIVES

Hives (urticaria) are red, very itchy, swollen areas of the skin. Hives arise suddenly and may disappear within 1 to 2 hours or may last as long as 48 hours. They often appear in clusters, with new clusters appearing as other areas clear. Hives may appear on arms, legs, or any exposed area. Swallowing ice cubes, cold water, or other cold liquids can provoke symptoms on the lips or in the mouth. More than one-fifth of the population has hives at some point in their lives.

Hives often are caused by adverse reactions to a food, drug, or insect sting. The following substances commonly cause hives in allergic individuals:

- Foods such as peanuts, tree nuts, shellfish, milk, fish, and eggs. These foods also may cause more severe allergic reactions, including anaphylaxis. Tomatoes and berries also can cause hives.
- Drugs such as penicillin, sulfa, anticonvulsant, phenobarbital, and aspirin.
- Venom from the stings or bites of insects such as honeybees, yellow jackets, hornets, wasps, or fire ants.

In some children, hives persist over long periods of time. In the majority of chronic cases, the exact cause is unknown.

Hives also can develop after repeated stroking or rubbing of the skin, as occurs with scratching or wearing tight-fitting garments. Individuals with this condition have **dermatographism**. **Cholinergic urticaria** is a term for hives that develop after activities that increase the body's temperature, such as exposure to heat. Heat-induced hives can be triggered by a warm bath, shower, jacuzzi or hot tub use, exercise, a fever, or emotional stress. **Cold-induced urticaria** occurs after exposure to cold wind or water. **Solar urticaria** is caused by exposure to sunlight and can result from sunlight coming through a glass window. Exercise is another cause of hives. Individuals affected by hives also can develop more severe symptoms, such as anaphylaxis, respiratory obstruction, and loss of consciousness.

Management

People who are prone to hives should avoid the foods, drugs, or other provoking factors whenever possible. Antihistamines are used to treat recurrent episodes. If the hives do not respond to antihistamines, many physicians will prescribe corticosteroid drugs, such as prednisone, which are given in conjunction with the antihistamines.

A child who is suffering from a bout of hives may be very uncomfortable from itchy skin or drowsy from the antihistamines used for treatment. The school nurse or other school personnel should contact the parents of children who are having trouble concentrating or performing normal school activities.

ASTHMA

Asthma is a condition of the airways characterized by a limitation of the flow of air into and out of the lungs. This limitation causes symptoms that include coughing, tightness in the chest, shortness of breath, chest pain, and wheezing. Wheezing is a high-pitched sound that people with asthma sometimes make when they breathe air into the lungs and, especially, when they exhale. Symptoms can be mild or severe. Some asthma episodes can be fatal. Symptoms occur when individuals with asthma are exposed to things to which their airways are sensitive.

Most children with asthma have allergies to allergens in the air, including pollens and mold spores outside and from pets, molds, and microscopic dust

mites inside. Episodes (attacks) of asthma can also be triggered by a variety of different things, including colds, exercise, cigarette smoke, cold air, paint and cleaning fumes, emotions, and pollutants. In the school environment, chalk dust, dust mites, animal dander, and physical activity during physical education class and recess are common factors that can bring on asthma symptoms.

The severity of asthma varies with each individual. Although some students have severe asthma that may require modification of their education plan, most children with asthma should be viewed as students with a condition that can be controlled to allow full and rewarding participation in all school activities.

Management

Many asthma symptoms can be prevented by reducing the students' exposure to identified allergens and irritants. For example, keeping furred animals out of the classroom can help.

If school personnel are familiar with the symptoms of asthma, they may be able to recognize the early stages of exacerbations when they occur. Prompt treatment of episodes will help prevent them from becoming severe and will help a child return quickly to his or her school activities. A written plan for managing a student's asthma should be submitted by the parents and the child's physician and be kept in the school record, with copies made available to teachers. Further, it is useful for schools to establish some mechanism for reporting to the parents when a child has experienced symptoms of asthma and needed treatment. Many children monitor their asthma with a peak flow meter, a small device that measures airflow limitation. School nurses or other school personnel may find peak flow meters helpful in assessing severity of episodes and response to medication, using a management plan written by the student's doctor.

Asthma is treated with two types of medication: relievers and preventers. Bronchodilator inhalers are relievers that are used on an as-needed basis to relieve symptoms. Preventer medications include cromolyn or inhaled corticosteroids, and these are used on a daily basis for long periods of time to provide long-term control and to prevent episodes. Because most preventer medications can be given at home, the only medication usually needed at school is the reliever bronchodilator inhaler.

Students should have easy access to the medications they need. School policies should allow students to carry the medications with them if the parents and physician consider this appropriate for a student. This will enable the student to minimize symptoms during the school day without the disruption of leaving the classroom to get medicine. Children should not be made to feel conspicuous when they take medications.

Exercise-induced asthma/bronchospasm

Many children with asthma cough or wheeze when they exercise, run, or play hard. This condition, sometimes called exercise-induced asthma or exercise-induced bronchospasm, occurs when the airways narrow minutes after a person begins vigorous physical activity. Exercise-induced asthma occurs in about 90 percent of people who have asthma. For some people, exercise is the *only* trigger for asthma symptoms.

Children who have untreated exercise-induced asthma often may find it difficult to participate in sports and other activities that involve physical exertion. Symptoms may occur not only after exercise but also when walking in cold, dry air. Often the only way to know whether exercise-induced asthma is causing a problem is to have a physician evaluate the child's condition. School personnel and parents can help recognize the symptoms of exercise-induced asthma (frequent reports of shortness of breath, tight chest, cough, or wheezing when exercising or poor stamina) so children can be referred for evaluation.

Medications are available to prevent or treat this condition. Proper treatment should enable most children with asthma to participate in any physical activity they choose without experiencing asthma symptoms. Using an inhaled bronchodilator or taking cromolyn 5 to 15 minutes before exercising will prevent most exercise-induced episodes. When a student with asthma is frequently unable to tolerate physical activity, this may be a sign that his or her asthma is not adequately controlled on a regular, daily basis. Appropriate daily maintenance medication may be sufficient to enable a child to fully participate in physical activity.

The school nurse, teachers, physical education instructors, and administrators as well as health care professionals should form a "team" with the child to tailor the form of physical activity to the student with asthma. Seasonal conditions (such as cold temperatures, air pollution, or high pollen counts) or the occurrence of asthma symptoms may require the student to rest or temporarily modify his or her activities. A child with

asthma rarely needs to be excused permanently from physical activity. Appropriate asthma management should enable most children to participate, in the long term, in any activity.

MEDICATIONS FOR CHILDREN WITH ALLERGIES/ASTHMA

Children with allergies and asthma often must take medication on a regular basis to prevent symptoms and extra medicine during an acute episode. Although health care providers try to schedule medication use so the child does not have to take medication at school, this sometimes is not possible.

Most asthma medications today are taken in inhaled form. Some young children may need to take a liquid for acute attacks or may need medication delivered by a nebulizer. Occasionally, a child will have to take a capsule of sprinkle-type medication during school hours, which usually is dispensed by mixing it with a food such as applesauce that can be provided by the parents. Asthma medication in a tablet form is no longer used to a significant degree by physicians who treat children with asthma.

Eye or nasal symptoms are treated with antihistamines and/or decongestants, which may be in liquid, tablet or capsule forms, or as over-the-counter nasal sprays. Nasal symptoms may also be treated with prescription nasal sprays such as cromolyn or a corticosteroid and eye symptoms with anti-allergy eye drops. School nurses and other school personnel should be aware that these medications usually can be given at home and should not be needed at school.

Every child with asthma or allergies who may need to take a medication in school should have a student action card that describes:

- the child's daily medications;
- factors that can bring on asthma or allergic symptoms;
- phone numbers for the physician and parents;
- explicit directions on what to do if the child experiences an episode at school; and
- signs indicating a medical emergency.

Schools should have a written medication policy that allows children easy and prompt access to medications in the least restrictive way that is consistent with the needs of the individual student and the safety of others.

Children with asthma who are old enough (at least 5 years old) and mature enough (as determined by the parents and physician and reviewed by the school nurse) should be allowed to carry their inhalers with them or to keep the inhalers in their desks or lockers. This policy encourages adherence to a medication plan by reducing embarrassment and class disruption and by increasing convenience for the child. For example, many students will not use their inhalers before physical education class if they have to go to the office to do so. A gentle reminder from the physical education teacher about premedication before beginning activity also may be helpful for the student.

School nurses or other qualified personnel can help by observing the child's technique in taking the medication. Often the apparent failure of inhaled medication can actually be attributed to improper use of an inhaler. It also may be helpful for school nurses to develop a system for reporting to parents when children with asthma appear to be using their inhaler more frequently than is indicated in their written medication plan.

Allergy Medicines

There are four types of medications commonly used to treat or prevent allergic symptoms. Over-the-counter or prescription oral antihistamines and decongestants, over-the-counter nasal sprays, topical nasal steroids, and topical nasal cromolyn sodium.

Antihistamines/Decongestants

As their name suggests, antihistamines counter the effects of histamine, a chemical released by mast cells in the body's tissues that contributes to allergy symptoms. Antihistamines can relieve sneezing and itching in the nose, throat, and eyes and can reduce nasal swelling and drainage. Decongestants shrink mucous membranes to help clear nasal passages and sinuses.

ANTI-HISTAMINE CLASSIFICATION REFERENCE CHART		
Product	Antihistamine	Decongestant
<i>Ethanolamines</i>		
Actifed Sinus Nighttime	diphenhydramine HCl	pseudoephedrine HCl
Benadryl Capsules, and Injection	diphenhydramine HCl	—
Benadryl Allergy Sinus Headache, Cold Tablets and Nighttime Formula, and Decongestant Elixir, Kapseals and Tablets	diphenhydramine HCl	pseudoephedrine HCl
Benadryl Elixir, 25 Kapseals and Tablets and Spray	diphenhydramine HCl	—
Contac Night Cold & Flu Caplets	diphenhydramine HCl	pseudoephedrine HCl
Rondec	carbinoxamine maleate	pseudoephedrine HCl
Sinubid	phenyltoloxamine citrate	phenylpropanolamine HCl
Tavist-D	clemastine fumarate	phenylpropanolamine HCl
Tavist-1	clemastine fumarate	—
Tavist (all other forms)	clemastine fumarate	—
Tylenol Cold Night Time Medication Liquid	diphenhydramine HCl	pseudoephedrine HCl
Tylenol PM Extra Strength Pain Reliever/Sleep Aid	diphenhydramine HCl	—
<i>Alkylamines</i>		
Actifed Syrup, Tablets Plus and Plus Tablets	triprolidine HCl	Pseudoephedrine HCl
AlkaSeltzer Plus Cold Medicine and Cold & Cough Medicine	chlorpheniramine maleate	phenylpropanolamine bitartrate
AlkaSeltzer Plus Nighttime Cold Medicine, and Sinus Allergy Medicine	brompheniramine maleate	phenylpropanolamine bitartrate
Allerest Children's Chewable Tablets, and 12 Hour Caplets	chlorpheniramine maleate	phenylpropanolamine HCl

ANTI-HISTAMINE CLASSIFICATION REFERENCE CHART (continued)		
Product	Antihistamine	Decongestant
<i>Alkylamines (continued)</i>		
Allerest (all other forms)	chlorpheniramine maleate	phenylpropanolamine HCl
A.R.M. Allergy Relief Medicine	chlorpheniramine maleate	phenylpropanolamine HCl
Atrohist Plus	chlorpheniramine maleate	phenylephrine HCl and phenylpropanolamine HCl
BC Cold Powder	chlorpheniramine maleate	phenylpropanolamine HCl
Brexin	chlorpheniramine maleate	pseudoephedrine HCl
Bromfed Syrup	brompheniramine maleate	pseudoephedrine HCl
Bromfed (all other forms)	brompheniramine maleate	pseudoephedrine HCl
Cerose-DM	chlorpheniramine maleate	phenylephrine HCl
Cheracol Plus	chlorpheniramine maleate	phenylpropanolamine HCl
Cheracol Sinus	dexbrompheniramine maleate	pseudoephedrine sulfate
Chlorafed	chlorpheniramine maleate	pseudoephedrine HCl
Chlor-Trimeton Allergy-Sinus Headache	chlorpheniramine maleate	phenylpropanolamine HCl
Chlor-Trimeton Antihistamine & Decongestant Tablets, and Long Acting Antihistamine and Decongestant Repetabs Tablets	chlorpheniramine maleate	pseudoephedrine HCl
Chlor-Trimeton (all other forms)	chlorpheniramine maleate	—
Comtrex Multi-Symptom Cold Reliever Liquigels	chlorpheniramine maleate	phenylpropanolamine HCl
Comtrex (all other forms)	chlorpheniramine maleate	pseudoephedrine HCl
Contact Severe Cold and Flu Nighttime	chlorpheniramine maleate	pseudoephedrine HCl
Contact (all other forms)	chlorpheniramine maleate	phenylpropanolamine HCl

ANTI-HISTAMINE CLASSIFICATION REFERENCE CHART (continued)		
Product	Antihistamine	Decongestant
<i>Alkylamines (continued)</i>		
Coricidine	chlorpheniramine maleate	—
Coricidin D	chlorpheniramine maleate	phenylpropanolamine HCl
Deconamine	chlorpheniramine maleate	pseudoephedrine HCl
Dimetane-DC	brompheniramine maleate	phenylpropanolamine HCl
Dimetane-DX	brompheniramine maleate	pseudoephedrine HCl
Dimetapp	brompheniramine maleate	phenylpropanolamine HCl
Dorcol Children's Liquid Cold Formula	chlorpheniramine maleate	pseudoephedrine HCl
Dristan Allergy, and Cold Maximum Strength Multi-Symptom Formula	brompheniramine maleate	pseudoephedrine HCl
Dristan Cold Nasal Decongestant/Antihistamine/Analgesic Tablets	chlorpheniramine maleate	phenylephrine HCl
Dristan Cold and Flu	chlorpheniramine maleate	pseudoephedrine HCl
Drixoral Antihistamine/Nasal Decongestant Syrup	brompheniramine maleate	pseudoephedrine sulfate
Drixoral (all other forms)	dexbrompheniramine maleate	pseudoephedrine sulfate
Extendryl	chlorpheniramine maleate	phenylephrine HCl
4-Way Cold Tablets	chlorpheniramine maleate	phenylpropanolamine HCl
4-Way Fast Acting Nasal Spray	pyrilamine maleate	phenylephrine HCl
Fedahist	chlorpheniramine maleate	pseudoephedrine HCl
Hycomine Compound	chlorpheniramine maleate	phenylephrine HCl
Isoclor	chlorpheniramine maleate	pseudoephedrine HCl

ANTIHISTAMINE CLASSIFICATION REFERENCE CHART (continued)		
Product	Antihistamine	Decongestant
<i>Alkylamines (continued)</i>		
Kronofed-A	chlorpheniramine maleate	pseudoephedrine HCl
Medi-Flu	chlorpheniramine maleate	pseudoephedrine HCl
Novafed A	chlorpheniramine maleate	pseudoephedrine HCl
Novahistine Elixir	chlorpheniramine maleate	phenylephrine HCl
Novahistine DH	chlorpheniramine maleate	pseudoephedrine HCl
Ornade	chlorpheniramine maleate	phenylpropanolamine HCl
Orthoxicol	chlorpheniramine maleate	phenylpropanolamine
Pedicare	chlorpheniramine maleate	pseudoephedrine HCl
Pyrroxate	chlorpheniramine maleate	phenylpropanolamine HCl
Quelidrine Syrup	chlorpheniramine maleate	phenylephrine HCl
Robitussin Night Relief	pyrilamine maleate	pseudoephedrine HCl
Ru-Tuss II	chlorpheniramine maleate	phenylpropanolamine HCl
Ru-Tuss With Hydrocodone	pheniramine maleate and pyrilamine maleate	phenylephrine HCl and phenylpropanolamine HCl
Ru-Tuss Tablets	chlorpheniramine maleate	phenylephrine HCl and phenylpropanolamine HCl
Ryna and Ryna-C	chlorpheniramine maleate	pseudoephedrine HCl
Rynatan	chlorpheniramine tannate	phenylephrine tannate and pyrilamine tannate
Rynatuss	chlorpheniramine tannate	phenylephrine tannate
Sinarest	chlorpheniramine maleate	pseudoephedrine HCl

ANTI-HISTAMINE CLASSIFICATION REFERENCE CHART (continued)		
Product	Antihistamine	Decongestant
<i>Alkylamines (continued)</i>		
Sine-Off	chlorpheniramine maleate	phenylpropanolamine HCl
Singlet	chlorpheniramine maleate	pseudoephedrine HCl
Sinulin	chlorpheniramine maleate	phenylpropanolamine HCl
Sinutab	chlorpheniramine maleate	pseudoephedrine HCl
Sudafed Plus	chlorpheniramine maleate	pseudoephedrine HCl
Teldrin	chlorpheniramine maleate	—
TheraFlu	chlorpheniramine maleate	pseudoephedrine HCl
Triaminic Nite Light	chlorpheniramine maleate	pseudoephedrine HCl
Triaminic Expectorant DH, and Oral Infant Drops	pheniramine maleate and pyrilamine maleate	phenylpropanolamine HCl
Triaminic (all other forms)	chlorpheniramine maleate	phenylpropanolamine HCl
Triaminicin	chlorpheniramine maleate	phenylpropanolamine HCl
Triaminicol	chlorpheniramine maleate	phenylpropanolamine HCl
Tussionex	chlorpheniramine polistirex	—
Tylenol Effervescent Cold Medication Tablets	chlorpheniramine maleate	phenylpropanolamine HCl
Tylenol (all other allergy, sinus, and cold/flu products)	chlorpheniramine maleate	pseudoephedrine HCl
Vicks Formula 44M	chlorpheniramine maleate	pseudoephedrine HCl
Vicks Children's Nyquil Nighttime	chlorpheniramine maleate	pseudoephedrine HCl

ANTIHISTAMINE CLASSIFICATION REFERENCE CHART		
Product	Antihistamine	Decongestant
<i>Ethylenediamine</i>		
PBZ	tripelennamine HCl	—
<i>Piperazines</i>		
Atarax	hydroxyzine HCl	—
Nolahist	phenindamine tartrate	—
Vistaril	hydroxyzine pamoate	—
<i>Phenothiazines</i>		
Phenothiazines VC, and VC with codeine	promethazine HCl	phenylephrine HCl
Phenergan (all other forms)	promethazine HCl	—
Temaril	trimeprazine tartrate	—
<i>Piperidines</i>		
Hismanal	astemizole	—
Seldane	terfenadine	—
Seldane-D	terfenadine	pseudoephedrine HCl
<i>Combination Medications</i>		
Atrohist Sprinkle	brompheniramine maleate	phenylephrine HCl and phenyltoloxamine citrate
Comhist LA	chlorpheniramine maleate	phenylephrine HCl and phenyltoloxamine citrate
Naldecon	chlorpheniramine maleate and phenyltoloxamine citrate	phenylpropanolamine HCl and phenylephrine HCl
Nolamine	phenindamine tartrate and chlorpheniramine maleate	phenylpropanolamine HCl
<i>Other Medications</i>		
claritin tablets	loratadine	—
Periactin	cycloheptadine HCl	—
Trinalin	azatadine maleate	pseudoephedrine sulfate

Side effects: *Antihistamines* may cause drowsiness, irritability, and difficulty concentrating. Some children may become agitated and hyperactive on these medications. *Decongestants* may cause nervousness, rapid heart rate, and fine tremor (which may interfere with handwriting).

If a child's school performance is significantly affected by drowsiness, agitation, or tremor, the child's parents should discuss this with the physician. A reduction in dosage, switching to a different antihistamine/decongestant preparation, or switching to a topical (nasal spray) medication can alleviate these problems.

Over-the-Counter Decongestant Nasal Sprays

These medications should be used in recommended doses only--no extra doses--and should not be used for more than 3 days in a row.

Generic names (trade names): Oxymetazoline (Afrin), phenylephrine (Neo-Synephrine).

Side effects: None, if used in recommended doses and for only 2 to 3 days at a time. In excessive doses, they can cause nervousness, fine tremor, or rapid heart rate. If used for more than several days in a row, they can cause "rebound" effect, resulting in worsening of nasal congestion.

Cromolyn Sodium (Nasal Spray)

This medication should be used on a regular basis, two to four times per day.

Generic name (trade name): Cromolyn sodium (Nasalcrom).

Side effects: Some children complain of mild nasal irritation. On rare occasions, some children experience nosebleeds.

Corticosteroid Nasal Sprays

These medications should be used regularly, two to three times a day.

Generic names (trade names): Beclomethasone dipropionate (Beconase, Vancenase), flunisolide (Nasalide), triamcinolone (Nasacort), budesonide (Rhinocort).

Side effects: Some children have mild nasal irritation. Contact the school nurse or parent on the rare occasions when nosebleeds occur. There appear to be no adverse effects from long-term use.

Note: These corticosteroid nasal spray should not be confused with "anabolic" hormones (steroids) that are used for increasing muscle mass.

Asthma Medicines

Two types of medicines commonly are used to treat asthma: relievers and preventers. **Bronchodilators relieve symptoms** by relaxing the airway and helping to reduce airway limitation during an episode. They are taken on an as-needed basis. Some children take a regular dose of long-acting bronchodilators to control chronic symptoms, especially at night. **Preventers** include **anti-inflammatory** medicines that reverse and prevent the airway inflammation that makes the airways sensitive. This prevents symptoms. Anti-inflammatory medicines need to be taken daily to **prevent** asthma symptoms.

Preventers, or Anti-inflammatory Medicines

Cromolyn (inhaled)

Generic name (trade name): Cromolyn sodium (Intal).

Side effects: Slight throat irritation or cough.

Unusual side effects of concern: None reported.

Inhaled Corticosteroids

Generic names (trade names): Beclomethasone (Beclovent, Vanceril); triamcinolone (Azmacort); flunisolide (Aerobid).

Side effects: Throat irritation or a yeast infection in the throat (which can often be prevented by using a plastic tube called a spacer device along with the inhaler), voice changes (for example, hoarseness).

Side effects of long-term, high-dose usage: Although not well established, side effects may be similar to oral corticosteroids if the inhaled corticosteroids are used in very high doses for a long period of time.

Oral Corticosteroids

Generic names (trade names): Prednisone (Deltasone); prednisolone (Prelone, Pediapred); methylprednisolone (Medrol); dexamethasone (Decadron).

Side effects: Nausea, mood changes, increased appetite, flushed cheeks, headaches.

Side effects of long-term (many weeks or months) usage: Weight gain with "puffy cheeks," cataracts, acne, high blood pressure, high blood sugar similar to diabetes, stomach ulcers, loss of calcium from the bones, decreased growth rate (of children).

Unusual side effects of immediate concern: Fainting, blood in the stool, falling and having severe pain (broken bone). Call the doctor immediately or get emergency treatment.

Relievers, or Bronchodilators

Beta Adrenergic

Generic names (trade names): Albuterol (Ventolin, Proventil); terbutaline (Brethaire, Brethine); metaproterenol (Alupent); pirbuterol (Maxair); bitolterol (Tornalate).

Side effects: Jitteriness, tremors, fast heart rate, nausea, headache, muscle cramps.

Unusual side effects of concern: Chest pain, increased blood pressure.

Theophylline

Generic names (trade names): Theophylline (Slo-Bid, TheoDur, Uniphyll, Quibron, Slo-Phyllin, and others); aminophylline (Aminophyllin, Phyllocontin, Somophyllin, Truphylline, and others).

Side effects: Nervousness, nausea, headache, insomnia, restlessness, irritability.

Unusual side effects of concern: Vomiting or extreme nausea, severe headaches, convulsions, increased blood pressure or pulse rate.

ENVIRONMENTAL CONTROLS IN THE SCHOOL SETTING

Physicians often give parents of children with asthma and allergies specific recommendations to help their children avoid troublesome allergens and irritants in the home. However, most of these children spend a great deal of time in a school classroom, where they can be exposed to a number of allergens. Some of the same recommendations for the home can be implemented at school. The following suggestions can help reduce children's exposure to allergens and resulting symptoms at school, thereby improving attendance and attention to lessons.

Dust Mites

A major source of allergy for many allergic children is the house dust mite. At school, these microscopic insect-like creatures are likely to be found in gym mats, carpets, pillows, papers, and library books. If the school has carpeted classrooms, they should be frequently vacuumed and cleaned. However, strong odors from cleaning products may trigger asthma symptoms in some people. Products without perfumes or strong scents should be used whenever possible. Chemical treatments are available that kill the mites and clump them together for vacuuming; some agents break apart the protein of the mite.

Molds

Mold and mildew also are common problems for children with allergy and asthma. As at home, mold in the school is frequently found in bathrooms. Gym locker rooms and storage areas also should be checked for the presence of mildew. Sometimes books or athletic equipment that have been stored from year to year will contain mold and mildew. Frequent cleaning will help reduce this problem. Commercial products are available for removing and controlling mildew; a mild bleach and water solution also will help. Be sure that cleaning with these strong-smelling cleaners is done when students with asthma are not present because the odor alone can cause symptoms.

Pollens

Keeping windows closed is the best way to reduce pollen exposure in the school. However, ventilation can be a problem in classrooms that are not centrally air conditioned. Nonetheless, it is advisable to close all windows during periods of elevated pollen counts and to use fans as needed for

comfort. Some students may need to limit their outdoor activities during pollen season. If possible, grass should be mowed after school hours.

Animals

Animals in the classroom can cause symptoms of allergy or asthma in susceptible children. Pets such as rabbits, guinea pigs, or hamsters may start an episode in a child with asthma. If sensitive children handle an animal, even for a short time, they should wash their hands thoroughly immediately after the exposure to help prevent problems later in the day. It is best to keep all furry or feathered animals out of the classroom. Premedication before field trips that might expose students to animals may help prevent symptoms of asthma or allergies.

Irritants

Another area of concern for sensitive students is irritants. Chalk dust is probably the most common irritant in school, followed by irritant odors from laboratory chemicals or science experiments. Chemicals used by janitorial staff for regular cleaning or paint fumes also may cause problems for some students. If possible, school rooms should be painted during the summer. Cigarette smoke must always be avoided and can be eliminated by designating schools as smoke-free environments.

COMMUNICATION AMONG SCHOOL, HOME, AND PHYSICIAN: DEVELOPING A COOPERATIVE PLAN OF CARE

Family and school personnel need to work together to establish a cooperative plan for students with allergies or asthma and share the responsibility for keeping the child healthy and in school. The type of management plan a student needs will vary with the severity of the student's condition and other considerations. A simple information card in the student record may be sufficient for some students; other students will benefit from developing an Individualized Health Plan through the school's program to serve students' special educational or health needs.

Initially, the physician should outline a management plan that allows the child to control his or her allergies or asthma in order to maintain normal age-related levels of activity.

Once a management plan has been developed with the physician and the family, the parents and the school need to work together to implement the

plan. Conferences with the classroom teachers, physical education teacher, school nurse or aide, and even the principal can help. Addressing the following items during the conference(s) will help ensure a complete plan of care.

- **Symptoms.** Parents should discuss the child's specific asthma/allergic symptoms.
- **Avoidance measures.** Parents should provide a written list of factors in the school environment that bring on the symptoms. This helps the teacher make plans for classroom activities. The parents should outline necessary avoidance measures that need to be taken for prevention of symptoms.
- **Medications.** Discuss the child's medications--timing, expected effects, potential side effects. The parents should provide the medication, making sure that it is current and is labeled with the child's name and the name of the drug. Parents should alert school personnel to changes in medication, treatment, or status of asthma/allergies.
- **Medication policies.** Discuss the school's established policies regarding medications and their administration. Make sure the child will always have access to medications. Discuss the appropriateness of an individual student carrying and administering his or her own medication.
- **Management plans.** Written plans of action for daily care and for acute episodes should be established by the physician. They should include guidelines for when the parents and/or the physician need to be notified along with accurate telephone numbers.
- **Peak flow meters.** If a child with asthma uses peak flow monitoring, the parents should describe this in detail so that the guidelines for peak flow zone management care can be followed. Parents should provide the school with a peak flow meter.
- **Exercise.** Teachers should be informed under what circumstances the child should not participate in exercise activities. Parents and school personnel should work together to develop a plan of physical fitness and involvement in class that will encourage as much participation as possible.
- **Communication between school and home.** Teachers, parents, and students should clarify how to communicate with each other about the students' asthma and participation in school activities. Keeping communication open--to monitor progress, report difficulties, or make appropriate adjustments--will help ensure that everybody works together to keep the students' asthma or allergy well controlled.

ASTHMA AND ALLERGIES RESOURCES FOR SCHOOLS

Curricula for Children

Asthma Awareness: Curriculum for the Elementary Classroom is designed to help all students develop a basic understanding of asthma and ways to help classmates who have it. The curriculum has lesson plans for grades K through 6 and contains reproducible handouts for parents and students.

National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health, U.S. Department of Health and Human Services. September 1993. NIH Publication No. 93-2894. (Available from the National Asthma Education and Prevention Program.)

Open Airways for Schools is a package of materials that can be used in elementary schools to educate children with asthma ages 8 to 11 years about managing their asthma. It includes colorful posters, an instructor's guide, reproducible handouts for both children and parents, and a six-lesson curriculum. The package is available for \$29.95.

(To order, call 1-800-292-5542, or contact your local American Lung Association chapter at 1-800-LUNG USA.)

Asthma Care Training for Kids (ACT) is designed to teach asthma management skills to children ages 6 to 12 years and their families.

(Available from the Asthma and Allergy Foundation of America at the address listed below.)

Videos

Managing Asthma in Schools: An Action Plan gives the basics of asthma and shows school nurses, parents, and physicians how to work together as a team to manage a child's asthma.

(Available from the Asthma and Allergy Foundation of America.)

Care of Children With Asthma in Child Care and School Settings demonstrates the use of a metered-dose inhaler, a nebulizer, and a peak flow meter. It discusses the triggers and management of asthma episodes.

(To order, contact Learner Managed Designs, Inc.)

Making a Difference...Asthma Management in the Schools is a videotape that directs asthma management information to school personnel, especially physical education teachers, coaches, and principals. *Physical Activity and Asthma Considerations for Elementary and Secondary School Teachers* is

an accompanying booklet that helps classroom teachers, physical education teachers, and coaches promote full participation in physical activities for students with asthma. This booklet is available separately or with the video.

(Available from the National Asthma Education and Prevention Program.)

Other Materials

Managing Asthma: A Guide for the Schools is a booklet designed to provide school personnel with practical ways to help students with asthma participate fully in all school activities. It includes a simple action asthma plan and outlines specific roles and actions that various staff members can perform so that the school can support the child's asthma management efforts.

National Heart, Lung, and Blood Institute, National Institutes of Health, U.S. Department of Health and Human Services, and the Fund for the Improvement and Reform of Schools and Teaching, Office of Educational Research and Improvement, U.S. Department of Education. September 1991. NIH Publication No. 91-2650. (Available from the National Asthma Education and Prevention Program.)

Winners With Asthma is a poster of athletes who have asthma with basic information about asthma for school teachers.

(Available from the National Asthma Education and Prevention Program.)

Support Groups

Support groups can help children, parents, and school personnel understand the challenges posed by asthma and allergies. Support groups help members work together to enable students with these conditions to attend school safely and productively. Sponsoring organizations may be able to supply written materials, presentations, or in-service training on topics such as medication policies, environmental issues, allergy management, considerations for physical education and school food, and opportunities for special summer camps.

The **Asthma and Allergy Foundation of America (AAFA)** produces a resource kit that provides ideas for starting and sustaining support groups. AAFA also can provide technical assistance for establishing your own support group. In addition, the foundation supplies information on allergy and asthma, including the Student Asthma Action Card for recording

essential information about a child's asthma triggers and medications. Contact AAFA by writing to its national headquarters at 1125 15th Street, N.W., Suite 502, Washington, DC 20005, or by calling 1-800-727-8462.

Local chapters of the **American Lung Association (ALA)** often sponsor local support groups. They also can supply information and materials on allergy and asthma. For information on the services available in your area, check your telephone directory for a local ALA chapter or call 1-800-LUNG USA.

Other Contacts

The following organizations can supply information on the topics specified.

Asthma and Allergy

American Academy of Allergy, Asthma and Immunology. 611 East Wells Street, Milwaukee, WI 53202. 1-800-822-ASMA.

American College of Allergy, Asthma and Immunology. 800 East Northwest Highway, Suite 1080, Palatine, IL 60067. 1-800-842-7777.

National Allergy and Asthma Network/Mothers of Asthmatics. 3554 Chain Bridge Road, Suite 200, Fairfax, VA 22030. 1-800-878-4403.

National Asthma Education and Prevention Program Information Center. P.O. Box 30105, Bethesda, MD 20824-0150. 301-251-1222.

National Institute of Allergy and Infectious Diseases. Office of Communications, Building 31, Room 7A50, Bethesda, MD 20892. 301-496-5717.

National Jewish Center for Immunology and Respiratory Medicine. 1400 Jackson Street, Denver, CO 80206. 1-800-222-5864.

Eczema

Eczema Association for Science and Education. 1221 Southwest Yamhill, Suite 303, Portland, OR 97205. 503-228-4430.

Food Allergy

The Food Allergy Network. 4744 Holly Avenue, Fairfax, VA 22030. Nonprofit organization established to help families cope with food allergies and to increase public awareness about food allergies. They offer a number of publications including a Parent Guide and a food allergy awareness program for school nurses. 703-691-3179 or 1-800-929-4040.



AMERICAN ACADEMY OF ALLERGY
ASTHMA & IMMUNOLOGY

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